

SECTION I—CLAIMS

Amendment to the Claims:

This listing of the claims will replace all prior versions and listings of claims in the application. Claims 35, 37-40, 43, 46-48, 51, 54-56 are amended herein. Claims 1-34, 36-37, 44-45, and 52-53 are, or remain, canceled herein without prejudice. No new claims are added.

Listing of Claims:

1-34. (Canceled).

35. (Currently amended) A method in an application server, comprising:
receiving a Web service archive including:

- a Web service implementation having ~~abstract design-time functionality therein, the abstract design-time functionality being a plurality of Web service operations and a plurality of Web service parameters, the Web service operations and Web service parameters being~~ independent of runtime implementation requirements of the application server, ~~and wherein the Web service archive further includes~~
- a Web service deployment descriptor specifying a mapping of the Web service operations and Web service parameters ~~abstract design-time functionality~~ to the runtime implementation requirements of the application server, and ~~[[:]]~~
- a first and second virtual interface, each to selectively expose a different subset of the Web service operations and the Web service parameters in the Web service implementation, wherein each of the first and second virtual interfaces are publishable as a separate deployed Web service;

unpacking the Web service implementation, ~~and the Web service deployment descriptor, and the~~
~~first and second virtual interfaces~~ from the Web service archive into a directory within
the application server; and
~~deploying each of the first and second virtual interfaces as separately published Web services~~
~~executing the abstract design-time functionality as a deployed Web service~~ within the
application server based on the mapping specified by the Web service deployment
descriptor.

36-37. (Canceled).

38. (Currently amended) The method of claim 35, further comprising registering each of the
deployed Web services with a Web services registry on the application server.

39. (Currently amended) The method of claim 38, wherein registering each of the deployed Web
services comprises automatically registering each of the deployed Web services with a
Java Naming and Directory Interface (JNDI) of the application server.

40. (Currently amended) The method of claim 35, wherein deploying each of the first and second
virtual interfaces as separately published Web services ~~executing the abstract design-time~~
~~functionality as the deployed Web service~~ within the application server comprises
deploying the plurality of Web service operations and the plurality of Web service
parameters ~~executing the abstract design-time functionality~~ in a Web services container
of the application server,

~~wherein the deployed Web service to operate within the Web services container on the~~
~~application server.~~

41. (Previously presented) The method of claim 40, wherein the Web services container
comprises a dedicated implementation container.

42. (Previously presented) The method of claim 41, wherein the dedicated implementation container comprises an Enterprise Java Bean (EJB) container or a servlet container.

43. (Currently amended) A computer-readable medium having instructions stored thereon that, when executed by a processor in an application server, causes the application server to perform a method comprising:

receiving a Web service archive including:

a Web service implementation having ~~abstract design-time functionality therein, the abstract design-time functionality being a plurality of Web service operations and a plurality of Web service parameters, the Web service operations and Web service parameters being independent of runtime implementation requirements of the application server, and wherein the Web service archive further includes~~

a Web service deployment descriptor specifying a mapping of the Web service operations and Web service parameters ~~abstract design-time functionality~~ to the runtime implementation requirements of the application server, and ~~[[:]~~

a first and second virtual interface, each to selectively expose a different subset of the Web service operations and the Web service parameters in the Web service implementation, wherein each of the first and second virtual interfaces are publishable as a separate deployed Web service;

unpacking the Web service implementation, ~~and~~ the Web service deployment descriptor, and the first and second virtual interfaces from the Web service archive into a directory within the application server; and

deploying each of the first and second virtual interfaces as separately published Web services
~~executing the abstract design-time functionality as a deployed Web service within the~~

application server based on the mapping specified by the Web service deployment descriptor.

44-45. (Canceled).

46. (Currently amended) The computer-readable medium of claim 43, wherein the method further comprises registering each of the deployed Web services with a Web services registry on the application server.

47. (Currently amended) The computer-readable medium of claim 46, wherein registering each of the deployed Web services comprises automatically registering each of the deployed Web services with a Java Naming and Directory Interface (JNDI) of the application server.

48. (Currently amended) The computer-readable medium of claim 43, wherein deploying each of the first and second virtual interfaces as separately published Web services ~~executing the abstract design time functionality as the deployed Web service~~ within the application server comprises deploying the plurality of Web service operations and the plurality of Web service parameters ~~executing the abstract design time functionality~~ in a Web services container of the application server,

~~wherein the deployed Web service to operate within the Web services container on the application server.~~

49. (Previously presented) The computer-readable medium of claim 48, wherein the Web services container comprises a dedicated implementation container.

50. (Previously presented) The computer-readable medium of claim 49, wherein the dedicated implementation container comprises an Enterprise Java Bean (EJB) container or a servlet container.

51. (Currently amended) An application server, comprising:

means for receiving a Web service archive including:

a Web service implementation having ~~abstract design-time functionality therein, the abstract design-time functionality being a plurality of Web service operations and a plurality of Web service parameters, the Web service operations and Web service parameters being independent of runtime implementation requirements of the application server, and wherein the Web service archive further includes~~
a Web service deployment descriptor having means for specifying a mapping of the Web service operations and Web service parameters ~~abstract design-time functionality~~
to the runtime implementation requirements of the application server, ~~and [[:]]~~
a first and second virtual interface, each having means to selectively expose a different subset of the Web service operations and the Web service parameters in the Web service implementation, wherein each of the first and second virtual interfaces are publishable as a separate deployed Web service;

means for unpacking the Web service implementation, ~~and the Web service deployment descriptor, and the first and second virtual interfaces~~ from the Web service archive into a directory within the application server; and

means for deploying each of the first and second virtual interfaces as separately published Web services ~~executing the abstract design-time functionality as a deployed Web service~~
within the application server based on the mapping specified by the Web service deployment descriptor.

52-53. (Canceled).

54. (Currently amended) The application server of claim 51, further comprising means for

registering each of the deployed Web services with a Web services registry on the application server.

55. (Currently amended) The application server of claim 54, wherein registering each of the deployed Web services comprises means for automatically registering each of the deployed Web services with a Java Naming and Directory Interface (JNDI) of the application server.

56. (Currently amended) The application server of claim 51, wherein deploying each of the first and second virtual interfaces as separately published Web services ~~executing the abstract design-time functionality as the deployed Web service~~ within the application server comprises means for deploying the plurality of Web service operations and the plurality of Web service parameters ~~executing the abstract design-time functionality~~ in a Web services container of the application server.

~~, wherein the deployed Web service to operate within the Web services container on the application server.~~

57. (Previously presented) The application server of claim 56, wherein the Web services container comprises a dedicated implementation container.

58. (Previously presented) The application server of claim 57, wherein the dedicated implementation container comprises an Enterprise Java Bean (EJB) container or a servlet container.